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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,823	12/16/2005	Jean-Christophe Fondeur	33155.29	5863
32300 7590 01/29/2008 BRIGGS AND MORGAN P.A. 2200 IDS CENTER 80 SOUTH 8TH ST MINNEAPOLIS, MN 55402			EXAMINER THOMAS, MIA M	
			ART UNIT 2624	PAPER NUMBER
			MAIL DATE 01/29/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/539,823

Applicant(s)

FONDEUR ET AL.

Examiner

Mia M. Thomas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

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DETAILED ACTION

Response to Amendment

1. This Office Action is responsive to the applicant's remarks received on 20 June 2005. Claims 1-7 have been canceled and claims 8-14 are new and currently pending.

A Revised Office Action is provided herein addressing the errors associated with the previous Office Action requiring a new grounds of rejection and reinterpretation of the claims and the existing grounds of rejection.

A new shortened statutory time period of three (3) MONTHS and a new statutory period for reply is restarted to begin with the mailing date of this letter.

Where for any reason it becomes necessary to remail any action (MPEP § 707.13), the action should be correspondingly redated, as it is the remailing date that establishes the beginning of the period for reply. Ex parte Gourtoff, 1924 C.D. 153, 329 O.G. 536(Comm'r Pat. 1924). For Image File Wrapper (IFW) processing, see IFW Manual.

MPEP 710.06

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The information disclosure statement filed 20 June 2005 fails to comply with 37 CFR 1.98(a)(1), which requires the following: (1) a list of all patents, publications, applications, or other information submitted for consideration by the Office; (2) U.S. patents and U.S. patent application publications listed in a section separately from citations of other documents; (3) the application number of the application in which the information disclosure statement is being submitted on each page of the list; (4) a column that provides a blank space next to each document to be considered, for the examiner's initials; and (5) a heading that clearly indicates that the list is an information disclosure statement. The information disclosure statement has

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been placed in the application file, but the information referred to therein has not been considered.

Appropriate correction is required.

Specification

4. The title of the invention is not descriptive. The title of this application appears to have a typographical error. In fact, the title as submitted on the substitute specification of this application includes a title that equally resembles the title of instant application 10/539,822. It is unclear to the examiner if the applicant intended to use the title as specifically disclosed on June 20, 2005 which reads as "Method of Determining the Living Character of an Bearing Carrying a Fingerprint", otherwise a new title is required that is clearly indicative of the invention to which the claims are directed and how that title distinguishes over instant applicant 10/539,822 with the similar title.

The following title is suggested: "Method and Device for Determining the Living Character of an Object Bearing a Fingerprint."

5. The disclosure is objected to because of the following informalities:

Portions of the specification use legal language more suited for claims, rather than disclosure. For example, refer to specification pages 2 (last paragraph) through page 3. The specification is the technical part of the patent application, and should be written in a technical rather than legal manner. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 8-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 8, will be utilized to exemplify the rejection, recites two distinct steps for comparing a measured "electrical quantity" with a "range of quantities". Namely, steps (b) and (e). However, the specification describes only one such comparison; that is specification at pages 5 and 6 describe the association of distinct ranges of impedances with distinct image "grades". An input fingerprint is imaged and the impedance measured at the same time, followed by a determination of the "grade" of the input printed, whereby the measured impedance is compared with a "range" of acceptable impedances associated with the determined grade.

8. At Claim 8 step (b) however, describes the determination of a living character of a finger by comparison of an electrical quality with a range. Then, at step (d), the claims seems to require the derivation of the ranges associated with the grades, which according to the specification would be done beforehand. Then, in step (e) of the claim, there seems to be another (second) comparison of the same "electrical quantity" of step (b) with the newly derived range of step (d). However, again, the specification only supports a single comparison of an

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input impedance with a range of acceptable values associated with a grade of the input fingerprint.

9. It is noted that the original claims do not recite dual comparisons. Rather, step (b) of claim 8 was in the preamble of the original claim 1, and in this context did not constitute a separate comparison step.

Based upon the dependency of claims 9 and 10, these claims are also rejected based on the same reasons as listed above.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 8-14 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claim 8 recites "an element". According to www.m-w.com, an element is any of the four substances air, water, fire, and earth formerly believed to compose the physical universe. When read in light of the specification, it is uncertain if applicant is referring to a "user's finger" as an element by way of literal translation or if the determination of a living character is an "element of a user" to be carried out in a fingerprint sensor and the execution thereof.

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- Claim 8 also recites the limitation "*the living character*" at page 7, line 1 of claim 8. There is insufficient antecedent basis for this limitation in the claim.

Examiner considers this statement to be best understood by way of the following for the preamble: "A method of determining a living character of a "finger, of a user" carrying a fingerprint and said finger being placed on a fingerprint sensor having an optical system, the method comprising the steps of:

For examination purposes, the following interpretation of claim 8 will be assumed:

***8. A method of determining a living character of a finger of a user carrying a fingerprint and said finger being placed on a fingerprint sensor having an optical system, the method comprising the steps of:

(a) measuring an electrical quantity of the finger;

~~(b) determining the living character of the element when the electrical quantity measured belongs to a range of quantities judged acceptable;~~

(c) taking an image of the fingerprint carried by the element by means of the optical system;

(d) measurement of a particular characteristic of the image and associating a range of electrical quantities judged to be acceptable with said characteristic ~~deducing of a range of values from the electrical quantity judged in principle acceptable~~ using a relationship established between values of a said particular characteristic of the image and a range of values of said electrical quantity judged acceptable;

and (e) validation of the value of the electrical quantity measured if this measurement is situated in the range.

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As best understood by the Examiner, this interpretation of Claim 8 is fully consistent with the specification, at pages 6 and 7.

The remaining claims 9-10 are rejected on the same grounds for the same reasons.

- Claim 10 also recites the limitation "*the impedance*" at page 7, line 2 of claim 10. There is insufficient antecedent basis for this limitation in the claim.

Similarly with regards to Claim 11, Claim 11 recites the limitation "*the living character*" at page 8, line 1 of claim 11. There is insufficient antecedent basis for this limitation in the claim.

- Claim 11 recites "an element". According to www.m-w.com, an element is any of the four substances air, water, fire, and earth formerly believed to compose the physical universe. When read in light of the specification, it is uncertain if applicant is referring to a "user's finger" as an element by way of literal translation or if the determination of a living character is an "element of a user" to be carried out in a fingerprint sensor and the execution thereof.

Examiner considers this statement to be best understood by way of the following for the preamble of Claim 11:

"A fingerprint sensor adapted to determine a living character of a "finger, of a user" carrying a fingerprint placed on a sensor, the sensor comprising:..."

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- Claim 11 (d) also recites the limitation "*a particular characteristic*" at page 8, line 12 of claim 11. There is insufficient antecedent basis for this limitation in the claim.
- Claim 11 (e) also recites the limitation "*a range of values*" at page 8, line 15 of claim 11. There is insufficient antecedent basis for this limitation in the claim.
- Claim 11 (f) also recites the limitation "*this measurement*" at page 8, line 18 of claim 11. There is insufficient antecedent basis for this limitation in the claim.

Which "range of values" is the "range of values to be judged acceptable" at claim 11?

The remaining claims 12-14 are rejected on the same grounds for the same reasons.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. Claim 8 as best understood by the Examiner is rejected under 35 U.S.C. 102(e) as being anticipated by Muramatsu et al. (US 6,888,956 B2).

Regarding Claim 8: Muramatsu discloses:

A method of determining a living character of an element carrying a fingerprint and placed on a fingerprint sensor having an optical system ("The present invention relates to an optical fingerprint authentication apparatus." at column 1, line 8; performs a judgment as to whether the pattern is living fingerprint (of a person) or a non-living fingerprint (replica)." at column 4, line 32); the method comprising the steps of:

(a) measuring an electrical quantity of the element ("More specifically, when light from the light source strikes a photodiode, the photodiode generates an electrical current proportional to the incident light. This electrical current is amplified by the amplifier and extracted, resulting in an electrical signal corresponding to the light." at column 5, line 20);

(c) taking an image of the fingerprint carried by the element by means of the optical system ("The present invention acquires an image of an object (finger) using an optical image sensor having infrared sensitivity to sense light scattered or reflected from the object, and in doing so acquires an image (fingerprint pattern) of the object, determines the clarity thereof, and performs a judgment as to whether the pattern is living fingerprint (of a person) or a non-living fingerprint (replica)." at column 4, line 32);

(d) measurement of a particular characteristic of the image (Refer to figure 8, numeral S2, for clarity, Examiner is stating that any "particular characteristic" of measurement of the image of a fingerprint is synonymous with minutiae and one of ordinary skill in the art would easily construe the same logic) and associating a range of electrical quantities judged to be acceptable with said characteristic (Refer to figure 8, numeral S3; "The optical image sensor 13 converts the

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infrared light incident thereto to an electrical signal, which is input to the image processing section 14." at column 6, line 4) using a relationship established between values of said particular characteristic of the image and values of said electrical quantity judged acceptable (Refer to Figure 8, numerals S4 and S5, respectively);

and (e) validation of the value of the electrical quantity measured if this measurement is situated in the range (Refer to Figure 8, "Authentication" and "No Authentication").

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 8- 13 as best understood by the Examiner are rejected under 35 U.S.C. 103(a) as being unpatentable over Nysaether et al. (US 2005/0069178 A1) in combination with Muramatsu et al. (US 6,888,956 B2).

Regarding Claim 11, Nysaether discloses:

A fingerprint sensor adapted to determine a living character of an element carrying a fingerprint placed on the sensor ("This invention relates to sensor device for performing measurements on an at least partially conductive surface, especially sensor geometry to facilitate AC capacitive fingerprint measurements on wet and dry fingers." at paragraph [0001]), the sensor comprising:

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(a) means of measuring an electrical quantity of the element ("This is obtained by a sensor as stated above and which is characterized in that it comprises a number of conductive structures at or directly below the sensor surface, said conductive structures consisting of at least one stimulation or current sink electrode and a number of sensor elements coupled to interrogation electrodes in an electronic circuit for measuring impedance between the electrodes and said at least one stimulus electrode, the sensor device also comprising at least one additional electrode being positioned in the vicinity of said sensor elements and being coupled to a chosen voltage." at paragraph [0009]);

(b) means of determining the living character of the element when the electrical quantity measured belongs to a range of values judged acceptable (Refer to Figure 7; "The impedances 15 and 14 are related to coupling of AC voltage into and out of the finger, respectively. The figure also shows coarsely estimated values for each of the impedances involved (with impedance absolute value expressed in Ohms at an AC frequency of 100 kHz). As shown by the circuit diagrams there is an impedance of around 10 Mega Ohms from the drive electrode 1 through the finger to the point 18 just above the sensor pad. This impedance is mainly related to capacitive impedance through the SC layer 5, and the impedance through the inner part of the finger 21 (living skin) is assumed to be negligible." at paragraph [0038]);

(d) means for establishing the relationship between values of a particular characteristic of the image and a range of values judged acceptable ("When choosing the value of the impedance 13 it is important the resulting voltage of the local electrode differs significantly from the voltage of the drive electrode itself. Otherwise the signal contrast between ridges and sweat-filled valleys may become too low." at paragraph [0039]);

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(e) means of deducing a range of values of the electrical quantity judged in principle acceptable from the particular characteristic measured ("With this respect it will often be advantageous to choose impedance 13 with a relatively low magnitude, e.g. in the range of 100 Ohms to 1 kOhm. However, a too low impedance may in some cases lead to an excessive current consumption, and the proper value must be chosen also with this aspect in mind." at paragraph [0039]);

Nysaether does not specifically disclose: (c) an optical system for taking an image of the fingerprint carried by the element and for measuring a particular characteristic of the image thus taken and (f) means of validating the value of the electrical quantity measured if this measurement is situated in the range.

Muramatsu teaches (c) an optical system for taking an image of the fingerprint carried by the element and for measuring a particular characteristic of the image thus taken (Refer to Figure 2; "FIG. 2 is a drawing showing the configuration of a second embodiment of a fingerprint authentication apparatus according to the present invention. In this fingerprint authentication apparatus, rather than using a prism and lens or such optical components, and in contrast to an optical fingerprint authentication apparatus in which a finger is brought into direct contact with an optical image sensor, an infrared light source 22 and an optical image sensor 23 having the infrared sensitivity are used, similar to the case of the first embodiment." at column 6, line 46);

and (f) means of validating the value of the electrical quantity measured if this measurement is situated in the range (Refer to Figure 8, "Authentication", "No Authentication").

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Nysaether and Muramatsu are combinable because they are in the same field of sensory measurement for fingerprint authentication.

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to utilize an optical system for taking an image of the fingerprint carried by the element and for measuring a particular characteristic of the image thus taken.

The suggestion/motivation for using an optical system for taking an image of the fingerprint carried by the element and for measuring a particular characteristic of the image thus taken would be to obtain a reference set of data from which to compare the electrical signals associated with the values obtained by the optical image sensor. Since every finger has similar ridges and valleys, a larger database for associating those values with a specified user will increase the probability that the user identified or seeking authentication is in fact a living person and not a spoof or counterfeit finger assuming the identity of an enrolled user.

Therefore, it would have been obvious to combine the method of determining a living character of a user carrying a fingerprint as disclosed by Nysaether with the optical system taught by Muramatsu to obtain the invention as specified in Claim 11.

At the time that the invention was made, it would have also been obvious to one of ordinary skill in the art to [establishing a] means of validating the value of the electrical quantity measured if this measurement is situated in the range.

The suggestion/motivation for teaching a means of validating the value of the electrical quantity measured if this measurement is situated a range would also be to narrow the identity of the

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enrolled user and to expose the authentication of the potential user as being genuine or counterfeit.

Therefore, it would have been obvious to combine the method of determining a living character of a user carrying a fingerprint as disclosed by Nysaether with a means of validating the value of the electrical quantity measured if this measurement is situated a range as taught by Muramatsu to obtain the invention as specified in Claim 11.

Regarding Claim 8: By way of exemplary Claim 11, Claim 8 demonstrates the method steps of the rejected apparatus of Claim 11. Claim 8 is rejected for the same reasons as listed above at Claim 11.

Regarding Claim 12:

Nysaether teaches wherein the particular characteristic is selected from the group consisting of: the contrast of the image, the average grayscale of the image, the width of the images of the ridges formed by the said fingerprints, and the average grayscale of the ridges ("For wet fingers, where water or saline (sweat) fill the valleys, the problem is mainly that the saline is even more conductive than the stem corneum. With the described capacitive measuring technique this gives a high signal for both valleys and ridges, so that it is difficult to separate the two. When converted to a digital image of the finger, the result may be a low-contrast "inverted" image where the well-conducting valley appears as "black" and the slightly less conductive ridges appear as "dark grey". at paragraph [0007]).

Muramatsu and Nysaether are combinable because they are in the same field of sensory measurement for fingerprint authentication.

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to utilize a particular characteristic from the group consisting of the contrast of the image, the average grayscale of the image, the width of the images of the ridges formed by the said fingerprints, and the average grayscale of the ridges for fingerprint verification.

The suggestion/motivation for using one of these particular characteristics would be to create a larger range of values associated with the fingerprint minutiae (i.e. ridges and valleys). Since every finger has similar ridges and valleys, a larger database for associating those values with a specified user will increase the probability that the user identified or seeking authentication is in fact a living person and not a spoof or counterfeit finger assuming the identify of an enrolled user.

Therefore, it would have been obvious to combine a fingerprint sensor to determine the living character of a user carrying a fingerprint as disclosed by the combination of Muramatsu with Nysaether with the particular characteristics taught by Nysaether to obtain the invention as specified in Claim 12.

Regarding Claim 9: Claim 9 equally resembles the claimed inventive steps as claim 12. Claim 9 is rejected for the same reasons as listed above at Claim 12.

Regarding Claim 13: Nysaether teaches wherein the means of measuring an electrical quantity is a means of measuring impedance at the terminals of electrodes. ("This is obtained by a sensor as stated above and which is characterized in that it comprises a number of conductive

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structures at or directly below the sensor surface, said conductive structures consisting of at least one stimulation or current sink electrode and a number of sensor elements coupled to interrogation electrodes in an electronic circuit for measuring impedance between the electrodes and said at least one stimulus electrode, the sensor device also comprising at least one additional electrode being positioned in the vicinity of said sensor elements and being coupled to a chosen voltage.” at paragraph [0009]).

Regarding Claim 10: Claim 10 equally resembles the claimed inventive steps as claim 13.

Claim 10 is rejected for the same reasons as listed above at Claim 13.

16. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nysaether et al. (US 2005/0069178 A1) in combination with Muramatsu et al. (US 6,888,956 B2) as applied to the claims above, and further in view of Lee (US 6,952,490 B2).

Regarding Claim 14:

Nysaether in combination with Muramatsu discloses all the claimed elements as rejected above.

Nysaether in combination with Muramatsu does not specifically disclose [the] electrodes are formed on a transparent plate, the connections to the electrodes being conductive and also transparent.

Lee teaches wherein the electrodes are formed on a transparent plate, the connections to the electrodes being conductive and also transparent (Refer to Figure 1 or Figure 2, numeral 2; “...there is provided a method for fabricating a fingerprint recognizing device comprising the steps of: forming a transparent insulating layer using a transparent insulating material; forming a

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transparent electrode layer on the transparent insulating layer using a transparent conductive material..." at column 2, line 12).

Nysaether in combination with Muramatsu and further in view with Lee is combinable because they are in the same field of fingerprint authentication and recognition using electrodes.

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to formulate electrodes on a transparent plate, and the connections to the electrodes being conductive and also transparent.

The suggestion/motivation for this combination would be that in general fingerprint recognizing device according to the conventional art, a fingerprint image is outputted as a gray image in a state where the ridge lines of the fingerprint are directly contacted with the surface of the light emitting layer. As the fingerprint image is outputted as the gray image, the fingerprint image is not clear in processing the fingerprint image using the optical fingerprint image generated from the fingerprint recognizing device, thus making the processing of the image difficult. It is, therefore, advantageous to create a fingerprint recognizing device having patterned floating electrodes and a fabricating method therefor, in the fingerprint recognizing device having a transparent insulation layer, a transparent electrode layer and a light emitting layer, by forming patterned floating electrodes on a surface of the light emitting layer, a fingerprint image generated to the fingerprint recognizing device is outputted as states of turning on/off.

By way of the combination of the disclosed elements of Nysaether and Muramatsu further in view of Lee it would have been obvious to combine the formulation of electrodes on a

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transparent plate and the connections of the electrodes being conductive and transparent as taught by Lee with the combination of method for determining the living character of the claimed elements of Nysaether and Muramatsu to obtain the specific elements of claim 14.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US	7,181,052 B2	US	6,292,576 B1	US	7,203,345 B2
US	6,560,352 B2	US	6,665,428 B1	WO	01/24700 A1

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mia M. Thomas whose telephone number is 571-270-1583. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

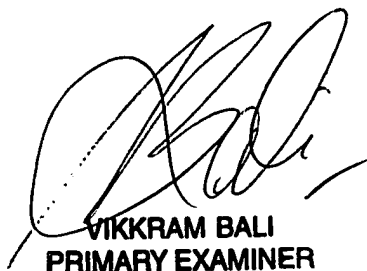
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on 571-272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Mia M Thomas
Examiner
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Mia M. Thomas



VIKKRAM BALI
PRIMARY EXAMINER